

**DATE:** October 1, 2021

**FROM:**   
Meg B. Pirkle, P.E., Chief Engineer

**TO:** Chief Engineer Divisions/Districts/Consultant Relations Committee

**SUBJECT: Median Usage Policy Update (4-ft Wide Flush Medians AMENDED – July 15, 2021)**

Current guidelines regarding 4-ft flush and 14-ft flush median usage have been updated in Chapter 6 of the GDOT Design Policy Manual (DPM). These updates were based on the results of recent research which evaluated rural high-speed roadways by median type, traffic volumes, driveway density, and crash severity<sup>1</sup>. Based on the results of this research, the Office of Design Policy and Support has updated the table for Median Options for Arterials (including GRIP Corridors) found in Chapter 6. A 14-ft flush median can be utilized if traffic volumes are equal to or less than 10,000 ADT, and design speed is less than or equal to 55mph. A 4-ft flush median can be utilized if traffic volumes are equal to or less than 5,000 ADT, design speed is less than or equal to 55mph, a rural shoulder is provided, and meets the additional required design criteria specified below. These new 4-ft guidelines with the attached guidance in the Design Policy Manual will supersede the original 4-ft flush median memo<sup>2</sup> dated March 12<sup>th</sup>, 2019. The official implementation regarding the new 4-ft flush median and 14-ft flush median guidelines will be effective on all projects immediately.

The use of 4-ft median shall not be combined with other minimum geometric design criteria; therefore:

1. Stopping Sight Distance and Intersection Sight Distance shall be provided for 10mph over the design speed, and
2. 12-ft wide travel lanes shall be required.

In addition, the following design elements shall also be required when using a 4-ft wide flush median:

1. Design and posted speed shall not exceed 55 mph (except for the criterion above);
2. Widening for left turn lanes will be required at intersections and major traffic generators;
3. Centerline rumble strips and enhanced striping will be installed; and
4. Shoulders widths will meet current AASHTO Green Book criteria.

<sup>1</sup>GDOT Research Project No. 19-15, dated December 2019, Safety Performance of Rural Four-Lane Undivided Roadways and Rural Four-Lane Roadways with a Two-Way Left Turn-Lane.

<sup>2</sup>Interoffice Memo dated March 12<sup>th</sup>, 2019, from Margaret B. Pirkle, P.E., Chief Engineer. *4-ft Wide Flush Medians*.

In some cases, arterial widening projects have base and design year traffic volumes that are greater than the 5,000 ADT thresholds listed in the current policy. The projects may also be along sections of roadway with limited access points and a very low probability of future development. Examples of this include areas where state right-of-way is parallel to agricultural operations or where physical constraints such as a railroad or major utility, lakes, rivers, creeks, wetlands, steep slopes, and environmental resources are present. Coordination with city and/or county planning and zoning officials should occur early in project development to determine the probability of development along project alignments. This coordination should support a decision to use a 4-ft wide flush median and should be noted in the Design Variance as rationale for the decision.

To ensure that appropriate studies and support are given to the decision, the approval of a Design Variance from the Department's Chief Engineer will be required before a 4-ft flush median design can advance to the final plan phase if it falls outside the values listed in Chapter 6. The use of a 4-ft flush median in areas with a traffic volume greater than that listed in Chapter 6 of the DPM shall require a design variance, which shall include the following:

1. Base year traffic (should be less than 15,000 ADT);
2. 24-hour truck percentage;
3. Access point density per mile;
4. Crash history, in particularly as it directly relates to left turns;
5. Proposed Typical Section; and
6. Plan and Profile layout with curve data listed.

Attached for usage are CMFs for Median Usage on Rural Four-Lane High Speed Roadways.

If you have any additional questions regarding this implementation please contact Christopher Rudd, P.E. ([crudd@dot.ga.gov](mailto:crudd@dot.ga.gov)) or Michelle Pate, P.E. ([mpate@dot.ga.gov](mailto:mpate@dot.ga.gov)) at (404) 631-1771.

MBP:HP:RCR:FBF:GMP:DP  
Attachment

## CMFs for Median Usage on Rural Four-Lane High Speed Roadways

Attached below is a table summary of average calculated CMFs of severe crashes (KAB) for Median Usage on Rural Four-Lane High Speed Roadways. These numbers were calculated from the research Project “Safety Performance of Rural Four-Lane Undivided Roadways and Rural Four-Lane Roadways with a Two-Way Left-Turn Lane<sup>1</sup>” and provide results calculated from crash data specific to the State of Georgia. It should be noted these CMFs are comparative to the base condition of an undivided 4-lane roadway and should also only be applied to rural 4-lane roadways with high speeds greater than 50 mph. Cells with the blocks “N/A” are estimated to have average CMFs greater than 1, or were not able to be applied to the study due to constraints. .

### Estimated average CMFs for KAB crashes

	Truck Percentage	Vehicle AADT																											
		<=5,000				>5,000 to 10,000				>10,000 to 15,000				>15,000 to 20,000				>20,000 to 25,000				>25,000							
		Access Point Density, AP/mile																											
		<=10	>10 to 20	>20 to 30	>30	<=10	>10 to 20	>20 to 30	>30	<=10	>10 to 20	>20 to 30	>30	<=10	>10 to 20	>20 to 30	>30	<=10	>10 to 20	>20 to 30	>30	<=10	>10 to 20	>20 to 30	>30	<=10	>10 to 20	>20 to 30	>30
4-ft Flush Median	<=5%	0.41	0.43	0.45	0.40	0.57	0.59	0.62	0.55	0.65	0.67	0.70	0.62	0.70	0.73	0.76	0.68	0.75	0.78	0.81	0.72	0.79	0.82	0.85	0.76				
	>5% to <=10%	0.37	0.38	0.40	0.36	0.60	0.62	0.65	0.57	0.73	0.76	0.79	0.70	0.83	0.86	0.90	0.80	0.91	0.95	0.99	0.88	0.99	N/A	N/A	N/A				
	>10% to <=15%	0.34	0.35	0.37	0.32	0.63	0.65	0.68	0.60	0.82	0.85	0.89	0.79	0.98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
	>15% to <=20%	0.31	0.32	0.34	0.30	0.66	0.69	0.71	0.63	0.92	0.96	1.00	0.89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
	>20%	0.28	0.29	0.31	0.27	0.69	0.72	0.75	0.67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
TWLTL	<=5%	0.77	0.90	N/A	0.66	0.52	0.60	0.70	0.45	0.45	0.53	0.61	0.39	0.41	0.48	0.56	0.36	0.39	0.45	0.53	0.33	0.37	0.43	0.50	0.32				
	>5% to <=10%	0.68	0.81	0.92	0.59	0.48	0.55	0.64	0.41	0.42	0.49	0.56	0.36	0.39	0.45	0.52	0.33	0.36	0.42	0.49	0.31	0.35	0.40	0.47	0.30				
	>10% to <=15%	0.62	0.72	0.83	0.53	0.44	0.51	0.59	0.38	0.39	0.45	0.52	0.33	0.36	0.42	0.48	0.31	0.34	0.39	0.46	0.29	0.32	0.38	0.44	0.28				
	>15% to <=20%	0.55	0.63	0.74	0.47	0.40	0.46	0.54	0.34	0.36	0.42	0.48	0.31	0.33	0.39	0.45	0.29	0.32	0.37	0.43	0.27	0.30	0.35	0.41	0.26				
	>20%	0.49	0.57	0.66	0.42	0.37	0.43	0.49	0.32	0.33	0.38	0.45	0.28	0.31	0.36	0.42	0.27	0.29	0.34	0.40	0.25	0.28	0.33	0.38	0.24				
Non-traversable	<=5%	N/A	N/A	N/A	N/A	0.86	0.92	0.99	0.80	0.57	0.61	0.65	0.53	0.44	0.47	0.50	0.41	0.36	0.39	0.41	0.34	0.31	0.33	0.35	0.29				
	>5% to <=10%	N/A	N/A	N/A	N/A	0.68	0.73	0.78	0.63	0.49	0.52	0.56	0.45	0.39	0.42	0.45	0.37	0.33	0.36	0.38	0.31	0.29	0.32	0.34	0.27				
	>10% to <=15%	N/A	N/A	N/A	N/A	0.54	0.58	0.62	0.50	0.42	0.45	0.48	0.39	0.35	0.38	0.41	0.33	0.31	0.33	0.36	0.29	0.28	0.30	0.32	0.26				
	>15% to <=20%	0.77	0.80	0.87	0.70	0.43	0.46	0.49	0.40	0.36	0.38	0.41	0.33	0.32	0.34	0.36	0.29	0.29	0.31	0.33	0.27	0.27	0.29	0.31	0.25				
	>20%	0.47	0.50	0.54	0.44	0.34	0.37	0.39	0.32	0.30	0.33	0.35	0.28	0.28	0.30	0.33	0.26	0.27	0.29	0.31	0.25	0.26	0.28	0.30	0.24				

<sup>1</sup>GDOT Research Project No. 19-15, dated December 2019, Safety Performance of Rural Four-Lane Undivided Roadways and Rural Four-Lane Roadways with a Two-Way Left Turn-Lane, Appendix C.